

ABSTRACT

A method of partially oxidizing a feed gas comprises providing a reactor containing a catalyst, providing a gas distributor comprising a body having a plurality of channels therethrough and a plurality of outlets from said channels for distributing gas across the catalyst, feeding the feed gas and the oxygen-containing gas into the gas distributor and allowing the feed gas and the oxygen-containing gas to flow through the gas distributor and out through the outlets into contact with the catalyst. The gas distributor preferably comprises a micro-channel gas distributor, which can be assembled by providing a plurality of etched plates defining flow channels, and stacking and fusing the plates. The reactant gases can be mixed within the gas distributor or maintained separately until they have exited the gas distributor.